



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,405	07/28/2003	Brian K. Tanner	PANA-01066US3	7231
23910	7590	08/11/2004	SRM/TAW	
FLIESLER MEYER, LLP FOUR EMBARCADERO CENTER SUITE 400 SAN FRANCISCO, CA 94111			EXAMINER MILLER, PATRICK L	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/629,405

Applicant(s)

TANNER, BRIAN K.

Examiner

Patrick Miller

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 13-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09122003</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1-17 are objected to because of the following informalities: See bullets below.

Appropriate correction is required.

- Claims 1 and 5 recite, “the temperature.” Lack of antecedent basis. Change “the” to “a.”
- Claims 1 and 5 recite, “the VCM.” Lack of antecedent basis. Change to “the voice coil motor (VCM).”
- Claim 7 recites, “the torque.” Lack of antecedent basis. Change “the” to “a.”
- Claims 8-12 recite, “the spindle motor.” Lack of antecedent basis for this term. Please clarify.
- Claim 12 recites, “a decrease in the temperature.” Change “a” to “the,” since this limitation is previously recited in claim 7.
- Claim 13 recites, “determining a time out period after which the disk drive should be powered.” Change “should be” to “is” or similar language.
- Claim 14 recites, “the torque.” Lack of antecedent basis. Change “the” to “a.”
- Claims 14-17 recite, “a decrease in the temperature estimate.” Estimate is not previously cited. If this “decrease” is the same as that cited in claim 13, change claim to read, “the decrease in the determined temperature.”

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - Claim 7 recites the step of “increasing a torque applied during startup.” Claims 8-11 recite the step of increasing torque is with respect to a *spindle motor*. Since claim 7 does not recite a spindle motor, it is unclear to what motor the Applicant is increasing a torque during startup.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schirle (6,055,120) in view of Wallis (5,268,804).
  - With respect to claim 1, Schirle discloses a method to determine spin-up parameters of a spindle motor in a disk drive including the step of: using the temperature of the voice coil motor (VCM) to determine the spin-up parameters of the spindle motor (abstract), where the spin-up parameter is start-up failure time, and failure time is dependent on the

spindle and drive design: its power outputs, thermal capacitance, and thermal conductivities (col. 4, lines 55-59). Since the “using the temperature” step does not disclose using the *determined* temperature of the VCM, the Examiner has interpreted the “using the temperature” within its broadest reasonable meaning. Specifically, the temperature sensor of Schirle (Fig. 2, #50) detects the ambient temperature inside the disk drive module (col. 4, lines 35-46). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention that, since the voice coil motor emits heat, the ambient temperature sensed by the temperature sensor is comprised, in part, from the temperature of the VCM.

- With respect to claims 1 and 3, Schirle does not disclose determining the temperature of the VCM and determining the temperature comprises measuring the resistance of a coil of the VCM.
- Wallis discloses determining the temperature of a VCM by measuring the resistance of a coil of the VCM (col. 4, lines 47-63). Wallis measures the temperature of the VCM as described to increase the time taken to move the data head between given positions if the temperature of the VCM is above a predetermined value (abstract). This provides the advantage of reducing the heat built up in the mechanism moving the data without reducing the data access time (cols. ½, lines 63-68/1-5).
- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use the resistance of a coil of the VCM to determine the temperature of the VCM, thus increasing the time taken to move the data head between given

positions, and providing the advantage of reducing the built-up heat in the mechanism moving the data without reducing the data access time, as taught by Wallis.

- With respect to claim 2, Schirle discloses the spin-up parameters include spin-up time (abstract, col. 2, lines 14-28, col. 4, lines 47-59; failure timing or time-out period).
- With respect to claim 4, Schirle discloses the step of setting a time out period after which the spindle motor is turned off if it has not reached a desired operational velocity (col. 4/5, lines 66-67/1-13), wherein the time out period is increased with a decrease in the temperature (col. 4, lines 31-34; increased time-out period when the temperature is low).

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schirle (6,055,120).

- With respect to claim 5, Schirle discloses a method to determine spin-up parameters of a spindle motor in a disk drive including the step of: using the temperature of the voice coil motor (VCM) to determine the spin-up parameters of the spindle motor (abstract), where the spin-up parameter is start-up failure time, and failure time is dependent on the spindle and drive design: its power outputs, thermal capacitance, and thermal conductivities (col. 4, lines 55-59). Additionally, the temperature sensor of Schirle (Fig. 2, #50) detects the ambient temperature inside the disk drive module (col. 4, lines 35-46). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention that, since the voice coil motor emits heat, the ambient temperature sensed by the temperature sensor is comprised, in part, from the temperature of the VCM.
- With respect to claim 6, Schirle discloses the spin-up parameters include spin-up time (abstract, col. 2, lines 14-28, col. 4, lines 47-59; failure timing or time-out period).

*Allowable Subject Matter*

5. Claims 7-12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, and the minor informalities set forth in this Office action.
  - Assuming that claim 7 is intended to increase the torque applied to the spindle motor during startup, the Prior Art fails to disclose increasing the torque to the spindle motor corresponding with a decrease in the determined temperature, where the determined temperature is based on the measured resistance of a coil in a VCM.
6. Claims 13-17 would be allowable once the minor informalities are corrected.
  - With respect to claim 13, the Prior Art does not disclose increasing a timeout period for the spindle motor to reach a desired operational velocity, where the increase is based on a decrease in the determined temperature, and the determined temperature is based on the measured resistance of a coil of a VCM.

Art Unit: 2837

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 571-272-2070. The examiner can normally be reached on M-F, 8:30-5:30.

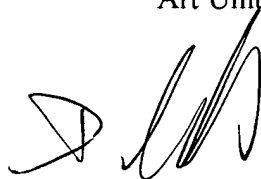
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2800 ext 41. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick Miller  
Examiner  
Art Unit 2837

pm  
July 26, 2004



**DAVID MARTIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800**